

## ABSTRACT

A device for providing the functionality of an oscillator and mixer is disclosed herein. The device uses a differential pair to provide first and second filter networks with a time varying signal. The first filer network generates an oscillating signal through the use of a 5 generated negative resistance and provides the oscillating signal while filtering out unwanted signals. The second filter network receives the time varying input signal and the oscillating signal and provides a mixed output while preventing the transmission of oscillations at the oscillating signal frequency. A double balanced embodiment is also disclosed.